Title: **A bioeconomic MPA study based on cellular automata population growth and distribution**

Author(s): Arne Eide

Abstract: This paper investigates the application of cellular automata (CA) models in bioeconomic studies involving varying biological growth and area distribution. A simple 2D continuous cellular automata (CCA) model is presented and incorporated in a fish harvest model based on standard assumptions of economic rational behaviour by individual decision makers. The performance of MPA regulation has been studied by the combined model under different diffusion and growth properties and random initial conditions. As expected the MPA regulation performance is found to be strongly linked to the size of the protected area and the diffusion properties of the stock.